

ASTRACT

Disclosed is a method of forming a titanium nitride film on a substrate through the reaction of titanium tetrachloride and ammonia while minimizing corrosion of the underlying layer. A
5 first titanium nitride layer is formed on a substrate by reacting titanium tetrachloride and ammonia with each other in the supply-limited region while minimizing corrosion of the underlying layer. Thereafter, a second titanium nitride layer is formed on the first titanium nitride layer in the reaction-limited
10 region while achieving good step coverage.